

What is claimed is:

A sterile disposable apparatus to heat solution comprising:

A protective shock absorbent thermal insulating outer housing;

Such outer housing defining a predetermined number of inner chambers;

- 5 Such inner chambers contain reactants when intermixed form a at least one prolonged exothermic reaction;

Such inner chambers form a hollow receptacle; and

A self sealing inlet on the outer housing allows instruments to be inserted and submerged in a fluid residing in the hollow receptacle.

- 10 A sterile disposable apparatus to heat solution as in claim 1, whereas the outer housing in intended to be attached to any surface.

A sterile apparatus for heating liquids comprising:

A shaped protective shock absorbent thermal insulating outer casing;

Such casing containing a multiple of inner chambers;

- 15 Such inner chambers contain reactants when intermixed form a at least one prolonged exothermic reaction;

Such inner chambers encase a solution receptacle;

A predetermined chemical fluid is injected into the receptacle; and

An instrument is inserted through a self sealing hollow in the outer casing to be

- 20 submerged in the liquid residing in the receptacle.

A sterile disposable apparatus to heat solution as in claim 3, whereas the outer housing in intended to be attached to any surface.

A sterilized endoscopic scope defogger comprising:

an insulated rigid outer casing;

- 25 a multiplicity of chambers formed by the side walls of said casing;

such chambers contain exothermic reactive chemicals;

a central chamber formed by the peripheral side wall chambers;

Such central chamber impregnated with defogging solution; and

- 30 a cavity within the outer casing to allow the surgical scope to be inserted into the central chamber.

said side wall chambers are breached to create a sustained exothermic reaction thus heating the surgical scope

An endoscopic scope defogger as in claim 5 wherein the distill end of the endoscopic lens is inserted into the cavity, submerged in the defogging solution.

- 5 An endoscopic scope defogger as in claim 6 wherein the cavity is filled with defogging solution.

An endoscopic scope defogger as in claim 7 wherein the catalyst for the heating reaction is in gel form in order to achieve a time delay reaction.

- 10 An endoscopic scope defogger as in claim 8 wherein said outer casing is a shock absorbent.

An endoscopic scope defogger as in claim 9 wherein said outer casing contains an adhesive.

An endoscopic scope defogger as in claim 10 wherein said adhesive is VELCRO.

- 15 An endoscopic scope defogger as in claim 10 wherein said outer casing exterior is attached to a wiping cloth.

An endoscopic scope defogger as in claim 10 wherein said wiping cloth is impregnated with a defogging solution.

An endoscopic scope defogger as in claim 10 wherein said endoscopic scope defogger is disposable.

- 20 An endoscopic scope defogger as in claim 10 wherein said endoscopic scope defogger is compact.

A compact portable sterile scope defogger comprising:

an insulated rigid protective outer casing;

interior of the casing composed of divided compartments;

- 25 periphery compartments contain a predefined number of chemicals to achieve a multiplicity of exothermic reactions upon breaching of the periphery compartments; central compartment being formed by side walls of the periphery compartments;

interior walls of the central compartment filled with defogging solution; and

- 30 a self sealing cavity in the outer casing to the surgical scope to be inserted into the central chamber to be submerged in the defogging solution.

A disposable compact portable sterile scope defogger comprising:

an insulated rigid protective outer casing;
periphery of compartments interconnected with ducts
delicate membrane separating the periphery compartments containing stored chemicals to
be breached in order to commence the generation of heat;

5 gas generated upon intermingling of chemicals travel through the ducts to other periphery
compartments containing metals which react with the gas to further produce a sustained
heat source;

central compartment composed of the exterior side walls of the peripheral compartments
allowing conduction of heat to be transferred;

10 inner wall of the central compartment filled with defogging solution; and
a self sealing cavity in the outer casing allowing the scope to be inserted into the central
compartment to be submerged in defogging solution.

A disposable compact portable sterile scope defogger comprising:

an insulated rigid protective outer casing;

15 periphery of compartments interconnected with ducts

delicate membrane separating the periphery compartments containing stored chemicals to
be breached in order to commence the generation of heat;

gas generated upon intermingling of chemicals travel through the ducts to other periphery
compartments containing metals which react with the gas to further produce a sustained

20 heat source;

each membrane retains a different decomposition characteristic;

central compartment composed of the exterior side walls of the peripheral compartments
allowing conduction of heat to be transferred;

inner wall of the central compartment filled with defogging solution; and

25 a self sealing cavity in the outer casing allowing the scope to be inserted into the central
compartment to be submerged in defogging solution.

A disposable compact portable sterile scope defogger comprising:

an insulated rigid protective outer casing;

periphery of compartments interconnected with ducts

30 delicate membrane separating the periphery compartments containing stored chemicals to
be breached in order to commence the generation of heat;

- gas generated upon intermingling of chemicals travel through the ducts to other periphery compartments containing metals which react with the gas to further produce a sustained heat source;
- each membrane retains a different decomposition characteristic;
- 5 central compartment composed of the exterior side walls of the peripheral compartments allowing conduction of heat to be transferred;
- the central compartment filled with defogging solution; and
- a self sealing cavity in the outer casing allowing the scope to be submerged into the defogging solution resident in the central compartment.
- 10 A compact portable sterile scope defogger comprising:
- an insulated rigid protective outer casing;
- interior of the casing composed of divided compartments;
- periphery compartments contain a predefined number of chemicals to achieve a multiplicity of exothermic reactions upon breaching of the periphery membranes;
- 15 each membrane retains a different decomposition characteristic;
- central compartment being formed by side walls of the periphery compartments;
- inner wall of the central compartment filled with defogging solution; and
- a self sealing cavity in the outer casing allowing the scope to be inserted into the central compartment to be submerged in defogging solution.
- 20 A disposable compact portable sterile scope defogger comprising:
- an insulated rigid protective outer casing;
- periphery of compartments interconnected with ducts
- delicate membrane separating the periphery compartments containing stored chemicals to be breached in order to commence the generation of heat;
- 25 gas generated upon intermingling of chemicals travel through the ducts to other periphery compartments containing metals which react with the gas to further produce a sustained heat source;
- chemical reaction catalyst within the compartments is in gel form to achieve a time delayed reaction.
- 30 each membrane retains a different decomposition characteristic;

central compartment composed of the exterior side walls of the peripheral compartments allowing conduction of heat to be transferred;
the central compartment filled with defogging solution; and
a self sealing cavity in the outer casing allowing the scope to be submerged into the
5 defogging solution resident in the central compartment.

A compact portable sterile scope defogger comprising:
an insulated rigid protective outer casing;
interior of the casing composed of divided compartments;
periphery compartments contain a predefined number of chemicals to achieve a
10 multiplicity of exothermic reactions upon breaching of the periphery membranes;
each membrane retains a different decomposition characteristic;
central compartment being formed by side walls of the periphery compartments;
interior walls of the central compartment being filled with defogging solution; and
a self sealing cavity in the outer casing for the surgical scope to be submerged into the
15 defogging solution of the central chamber.

A disposable compact portable sterile scope defogger comprising:
an insulated rigid protective outer casing;
periphery of compartments interconnected with ducts
delicate membrane separating the periphery compartments containing stored chemicals to
20 be breached in order to commence the generation of heat;
gas generated upon intermingling of chemicals travel through the ducts to other periphery
compartments containing metals which react with the gas to further produce a sustained
heat source;
chemical reaction catalysts within the compartments are in gel form to achieve a time
25 delayed reaction.

each membrane retains a different decomposition characteristic;
central compartment composed of the exterior side walls of the peripheral compartments
allowing conduction of heat to be transferred;
the central compartment filled with defogging solution;
30 electrical wiring embedded within the central compartment conductively connected to a
power source to produce additional heating; and

a self sealing cavity in the outer casing allowing the scope to be submerged into the defogging solution resident in the central compartment.

A disposable compact portable sterile scope defogger comprising:

an insulated rigid protective outer casing;

5 periphery of compartments interconnected with ducts

delicate membrane separating the periphery compartments containing stored chemicals to be breached in order to commence the generation of heat;

gas generated upon intermingling of chemicals travel through the ducts to other periphery compartments containing metals which react with the gas to further produce a sustained

10 heat source;

chemical reaction catalysts within the compartments are in gel form to achieve a time delayed reaction.

each membrane retains a different decomposition characteristic;

central compartment composed of the exterior side walls of the peripheral compartments

15 allowing conduction of heat to be transferred;

the central compartment filled with defogging solution;

electrical wiring embedded within the central compartment conductively connected to a power source to produce additional heating;

AC recharger base to electrically receive the compact portable sterile scope defogger to

20 power the electrical heating; and

a self sealing cavity in the outer casing allowing the scope to be submerged into the defogging solution resident in the central compartment.

A method to defog a surgical scope comprising:

inserting the scope within a protective compact insulated container;

25 having the scope submerged in defogging solution contained in the central compartment;

breaching the compartments of the peripheral compartments allowing catalyst to react with substrate producing a sustained exothermic reaction;

having the scope being in conductive contact with the heat generating chambers;

reinserting the scope within the container as needed during a procedure; and

30 utilizing the container as a holster for the surgical scope.

A method to defog a surgical scope comprising:

- inserting the scope within a protective compact insulated container;
- having the scope submerged in defogging solution in a central compartment;
- heating the central compartment;
- having the scope being in conductive contact with the heat generating chambers;
- 5 reinserting the scope within the container as needed during a procedure; and
- utilizing the container as a holster to protect the endoscopic scope.